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Santa Rosa expands ability to treat grease, food waste at sewer

Jim McCall, a foreman from Pacific Infrastructure Corp., installs a high strength waste tank at the Laguna Treatment Plant in Santa Rosa, on Tuesday, Dec. 15, 2015.
(BETH SCHLANKER/The Press Democrat)

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A massive crane lifted the last of four large silver tanks into place at Santa Rosa's wastewater treatment plant last week, a major milestone in the city's $3 million effort to turn tough-to-treat waste into energy and save local businesses money in the process.

The new equipment at the city's Llano Road plant isn't much to look at. The four 10,000-gallon tanks sitting on a concrete pad are not unlike the steel tanks found in typical breweries and wineries in the area.

But when they go into operation in April, the towering cauldrons will contain a far more potent brew — thousands of gallons of stuff typically too nasty to send down the sewers, including fats, oils, grease, food waste and slaughterhouse slime.

Currently, those and other high-strength wastes are trucked from North Coast restaurants, wineries, breweries and food producers to Oakland, where they are turned into energy at the treatment facilities at the massive East Bay Municipal Utility District.

But by building its own high-strength receiving and storage station, Santa Rosa hopes to treat that waste locally, turn it into biogas to keep the plant's power costs down, and save local businesses significant transportation costs.

“This is the missing link in the operations of the plant,” said Mike Prinz, director of subregional operations for Santa Rosa Water. “There’s a ratepayer benefit. There’s an environmental benefit. And there’s a business attraction benefit.”

Local businesses have been encouraging plant operators for years to develop the capacity to more efficiently and economically handle high-strength wastes, which carry such high additional treatment costs that most businesses opt for disposal elsewhere.
Those surcharges are high because it takes a significant amount of energy — mostly in the form of air blown into massive aeration basins — to help micro-organisms break down the nutrients in order to treat wastewater with high levels of biological material in it, Prinz explained.

A more energy-efficient way to treat such wastes is not by adding more and more air, but by taking it away, officials say.

That process, called anaerobic digestion, already takes place at the plant in massive holding tanks, where the solid waste from the sewage system is broken down in an oxygen-free environment. The biogas generated during the process is collected and used to power as many as four large generators, which can be used to reduce the plant’s approximately $3 million annual power bill.

The more biogas that is generated, the lower the plant’s costs and energy consumption. The plant’s four 1 million-gallon digesters have about 20 percent excess capacity in them, Prinz said.

Certain kinds of high-strength wastes do wonders to boost methane production in such environments, Prinz said. Fats, oils and grease, most of which are collected from the grease traps of commercial kitchens and restaurants, can be potent methane producers, he explained.

According to a presentation by Brown and Caldwell, the engineering firm that designed the city’s wastewater system, fats, oils and grease create four times as much methane as typical sewer sludge. Yeast sludge from breweries and wineries contains more than double the methane-producing potential.

If the city gets to full operation of its 40,000-gallons-per-day system, the plant could see biogas production increase 50 to 100 percent, depending on the type of wastes used, Prinz said.

The city is setting a disposal fee of 4 cents per gallon, which is comparable to fees in Oakland, and is hoping the local grease haulers, breweries and wineries see the cost savings in dumping their material locally.

It would certainly make Blaine Cristando's life easier. The co-owner of Santa Rosa's Environmental Pump Service says 95 percent of his business is grease-trap cleaning, and a round trip to Oakland is three and a half hours with no traffic.
"It's such a hassle to have to haul our waste all the way down to Oakland," Cristando said. "If we could have a location in our own backyard, that would be fantastic."

The city has made an effort to persuade businesses to view the local wastewater treatment system as an asset and not as a cost burden.

This focus on business attraction paid off with last year's decision by HenHouse Brewing Co. to move to Santa Rosa from Petaluma, which has a smaller plant without high-strength waste capability.

The existing HenHouse brewery is small, producing just 2,000 barrels a year out of another brewery's facility, But when the company gets up and running at its new Bellevue Avenue site, it will have the ability to grow to 75,000 barrels.

Knowing that the city would be able to handle the brewery's waste needs in an environmentally friendly way as it grew was key to HenHouse's decision to move to Santa Rosa, president Scott Goyne said.

"It gave us the confidence to put down some deep roots," Goyne said. "We want to grow here."

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